Food and Agriculture Organization of the United Nations

ISSUE BRIEF

FOSTERING LINKAGES BETWEEN SUSTAINABLE WOOD SUPPLY AND FOREST AND LANDSCAPE RESTORATION IN ASIA AND THE PACIFIC

Summary

Demand for wood and wood products within the Asia-Pacific region, and exports of wood products from the region, are growing, particularly through rising interest in the forest-based bioeconomy. Wood supply to meet this demand needs to be sustainable, to address climate change, biodiversity loss, poverty, and economic development challenges. In the face of these developments, at the 36th Session of the FAO Regional Conference, Member States requested stronger work on the sustainable production and consumption of wood (FAO, 2022a).

Forest and landscape restoration (FLR) is also a high priority for the region: some 500 million hectares of land in the Asia-Pacific region is considered degraded and current national goals aim to restore at least 185 million hectares. Sustainable wood supply (SWS) from part of this restored land can contribute to FLR goals by regenerating and better managing natural forests, through large-scale and small-scale plantations and woodlots on degraded land, and by integrating trees in farming in agroforestry systems.

This Issue Brief summarizes the deliberations of a Regional Dialogue on Integrating Sustainable Wood Supply and Forest and Landscape Restoration in Asia-Pacific, held on 2 October 2023 in conjunction with the 30th Session of the Asia-Pacific Forestry Commission (APFC) in Sydney, Australia.

The Dialogue found that enabling conditions for SWS and FLR are similar, providing opportunities to increase investment in FLR by producing wood in support of restoration goals. Realizing these opportunities will require actions in landscapes and along value chains resourced from public and private finance. Policymakers across the region can drive these actions through developing and implementing enabling policies, fostering collaborative learning, technical packages and capacity building, mobilizing finance to support all forms of SWS and FLR, and engaging small-scale actors in SWS and FLR. International organizations can play important facilitation roles in each of these action arenas.

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1. Introduction

Sustainable wood supply (SWS) and forest and landscape restoration (FLR) both aim to balance ecological, social, and economic benefits. Global commitments to these objectives reflect their importance to the international community, and to individual nations as part of their contributions to Sustainable Development Goals (SDG) and Paris Climate Agreement Targets. Both objectives are very important in the Asia-Pacific region, which is home to 55 percent of the world's people but only 26 percent of its forests and the region is experiencing significant forest loss and degradation and high demand for forest products and services. In recognition of this, the 36th Session of the FAO Regional Conference for Asia and the Pacific invited FAO to strengthen work and regional cooperation on sustainable production and consumption of wood (FAO, 2022a).

Growing demand for wood in the region is leading to a widening wood supply gap and exerting further pressure on remaining forest resources in the Asia-Pacific region (FAO, 2023). Countries in the region have responded to these pressures with ambitious commitments to FLR and to SWS (FAO, 2023). These commitments have led to initiatives for both FLR and SWS, but potential synergies between them, or how these synergies might be realized, have not been explored.

Realizing such synergies requires coordinated actions by intergovernmental organizations, national and subnational governments, large-scale and small-scale private sector actors in agriculture and forestry, and by investors. This Issue Brief presents findings to inform these actions, arising from a Regional Dialogue, Integrating Sustainable Wood Supply and Forest and Landscape Restoration in Asia-Pacific, held on 2 October 2023 in Sydney, Australia, in conjunction with the 30th Session of the Asia-Pacific Forestry Commission.

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2. Definitions

2.1 Forest and landscape restoration

Forest and landscape restoration (FLR) is "an active process that brings people together to identify, negotiate and implement practices that restore an agreed optimal balance of the ecological, social and economic benefits of forests and trees within a broader pattern of land uses." (FAO and APFNet, 2018, p. 5). FLR involves a diverse set of restoration actions across different land uses, as explained in the Regional Strategy and Action Plan on FLR (FAO and APFNet, 2018). These include tree planting, seeding, managed or natural regeneration, enrichment planting, silvicultural management, improved management of riparian zones and wildlife corridors (Figure 1).

Figure 1. Forest and landscape restoration options framework

Land Use	Land sub-type	General category of FLR option	Description
Forest land Land where forest is, or is planned to become the dominant land use → Suitable for wide-scale restoration	If the land is without trees, there are two options:	1. Planted forests and woodlots	Planting of trees on formerly forested land. Native species or exotics and for various purposes, fuelwood, timber, building, poles, fruit production, etc.
		2. Natural regeneration	Natural regeneration of formerly forested land. Often the site is highly degraded and no longer able to fulfil its past function – e.g. agriculture. If the site is heavily degraded and no longer has seed sources, some planting will probably be required.
	If the land is degraded forests:	3. Silviculture	Enhancement of existing forests and woodlands of diminished quality and stocking, e.g., by reducing fire and grazing and by liberation thinning, enrichment planting, etc.
Agricultural land Land which is being managed to produce food → Suitable for mosaic restoration	If the land is under permanent management:	4. Agroforestry	Establishment and management of trees on active agricultural land (under shifting agriculture), either through planting or regeneration, to improve crop productivity, provide dry season fodder, increase soil fertility, enhance water retention, etc.
	If it is under intermittent management:	5. Improved fallow	Establishment and management of trees on fallow agricultural land to improve productivity, e.g. through fire control, extending the fallow period, etc., with the knowledge and intention that eventually this land will revert back to active agriculture.
Protective land and buffers Land that is vulnerable to, or critical in safeguarding against, catastrophic events → Suitable for mangrove restoration, watershed protection and erosion control	If degraded mangrove:	6. Mangrove restoration	Establishment or enhancement of mangroves along coastal areas and in estuaries.
	If other protective land or buffer:	7. Watershed protection and erosion control	Establishment and enhancement of forests on very steep sloping land, along water courses, in areas that naturally flood and around critical water bodies.

[IUCN and WRI].[2014].[A guide to the Restoration Opportunities Assessment Methodology (ROAM): Assessing forest landscape restoration opportunities at the national or sub-national level] [Road-test edition].[Gland].[IUCN]

2.2 Sustainable wood supply

Sustainable wood supply (SWS) can be from natural and planted forests, or from trees outside forests, following the principles of Sustainable Forest Management (SFM). SFM is generally assessed against sustainability standards based on criteria and indicators under internationally-recognized certification schemes. SWS implies that all actors involved in wood product value chains, such as small-scaleb and large-scale growers, traders, and processors, are operating sustainably and receiving fair rewards (FAO, 2019).

3. Integrating sustainable wood supply and forest and landscape restoration in the Asia-Pacific region–capitalizing on the opportunities

The Sustainable Wood for a Sustainable World (SW4SW) initiative of the Collaborative Partnership on Forests (CPF, 2017) and the Ministerial Call on Sustainable Wood presented at the Ministerial Forum on Sustainable Wood 2022 (FAO, 2022b) both promoted SWS as a means of supporting the Sustainable Development Goals (SDGs) and Paris Agreement on Climate Change. FLR is gaining further momentum in the context of the United Nations Decade on Ecosystem Restoration (UNDER, 2023). The scale of the FLR challenge and commitments in the Asia-Pacific region, and the growing demand and imperative for SWS to support a growing bioeconomy, suggest many opportunities for integrating SWS and FLR in the region. For example, the APFC invited its members to:

- Respond to the 2022 Ministerial Call on Sustainable Wood, for the scaling up of wood-based pathways "with the aim of markedly increasing the utilization of sustainable wood-based solutions within Nationally Determined Contributions by 2030." (FAO, 2023, p. 2); and
- "Consider actions to strengthen the enabling environment and upscale FLR investments and actions at all levels, including by leveraging existing partnerships, to advance the implementation of the UN Decade on Ecosystem Restoration and meet the targets of the Kunming-Montreal Global Biodiversity Framework (GBF) and the Sustainable Development Goals (SDGs)." (FAO, 2023, p. 4)

3.1 Potential lands and options for integrating FLR and SWS in the Asia-Pacific Region

At least 500 million hectares of land in Asia and Oceania are heavily degraded (Minnemeyer *et al.*, 2011) and could be available for various forms of FLR. The availability of this land for FLR depends on the interests and aspirations of those drawing livelihoods from it (Elias *et al.*, 2021) and the potential for FLR to contribute to these. Only part of this area, namely sites with suitable environmental and operational conditions and adequate access to transport and processing infrastructure is suitable for SWS. Spatial analytical tools such as Aurora and se.plan can be used to explore the benefits, costs and risks of restoration strategies and identify the areas of potential intersection between FLR and SWS (FAO and WRI, 2022; SEPAL 2023 and Caradine *et al.*, 2023).

Options for integrating SWS and FLR discussed at the Dialogue included:

- regenerating and better-managing natural forests, for example Bhutan's forest areas outside Forest Management Units or Indonesia's Ecological Restoration Concessions;
- large-scale or small-scale plantations on degraded lands, for example the Republic of Korea's longstanding FLR programmes or Viet Nam's extensive development of smallholder plantations; and
- planting and managing trees outside forests in diverse farming systems, for example teak agroforestry systems in Indonesia or Vanuatu's smallholder sandalwood growers.

3.2 Actions to realize opportunities.

Policymakers can enable SWS as part of FLR in various ways:

- Greater investment in sustainably managed natural forests can be facilitated. For example, in Malaysia and Indonesia, natural forests impacted by past timber harvesting are being restored by allocating concessions to private companies that integrate restoration with future wood supply. Forest certification programmes can demonstrate the sustainability of wood supply.
- Tree growing for SWS by smallholder farmers can be increased. For example, in Viet Nam, the government provides secure land and tree tenure to smallholders and suitable tree species, technical support and access to finance, as well as infrastructure and access to markets. These trees provide income to alleviate rural poverty and provide environmental benefits.
- Responsible investment in larger-scale plantations can be promoted. For example, in Lao People's Democratic Republic, the government is granting longer-term rights to grow timber plantations on state-owned production forest areas degraded by past harvesting and conflict to companies investing in local processing facilities, employing local people, opportunities for contract tree growing and providing other community benefits.
- Greater control and responsibility of forest management can be granted to local communities. For example, in Nepal, enacting policies for community forestry has led to large scale restoration and tree cover in the Middle Hills, which is now a resource for developing local industries.
- Partnerships along wood product value chains can be fostered to ensure that all involved benefit from implementing more sustainable wood production within a framework of broader FLR objectives. For example, in Viet Nam, a private sector company is providing support for the World Wide Fund for Nature (WWF) and local governments to work with smallholder cooperatives to produce higher quality, certified timber for local processing into products for international markets.

Participants in the Regional Dialogue identified the need for further intercountry activities on:

- strategies to empower Indigenous Peoples' and local community involvement in SWS and FLR, and to ensure they share in the benefits of these activities;
- policy design to foster finance and markets for SWS and FLR investments, and to learn from successful public-–private partnerships;
- research and technology development to support integrating SWS and FLR;
- common standards and mutual recognition for SWS and FLR, including for investment; and
- increasing public awareness and market demand for SWS produced from FLR.

These action areas for national-level policymakers are discussed in more detail below. They align with strategic priorities of the Regional Strategy and Action Plan for Forest and Landscape Restoration in Asia Pacific (FAO and APFNET, 2018), which was endorsed in 2017 by the Asia-Pacific Forestry Commission. Other intergovernmental organizations, platforms, and partnerships such the Association of Southeast Asian Nations (ASEAN), Asia-Pacific Economic Cooperation (APEC), South Asian Association for Regional Cooperation (SAARC), the Pacific Community (SPC) and environmental non-government organizations (ENGOs) and research centres can address and support these actions.

3.3. Enabling policies to integrate SWS and FLR

Enabling policies at national- and sub-national levels support investment in SWS and FLR. These include secure tenure for landowners over land and trees and efficient and focused regulation of wood production that is fair to smallholder tree growers. Policies need to clearly specify goals of SWS and FLR, accommodate local variation and incentivize good practice and fair partnerships between actors in wood product value chains. These enabling policy settings create an environment in which public and private sector capital can be invested to support SWS and FLR at a range of scales.

Key elements of enabling policies are:

- a clear vision, goals and strategies for FLR that recognize the value of and incorporates sustainable wood supply;
- land use and wood industry planning that identify suitable areas for the SWS and FLR options indicated in Figure 1;
- support for sub-national and local level decision making to translate strategic goals into local goals and actions supported by local communities;
- simple regulatory and administrative processes for tree growing and wood value chains that enable SWS; and
- actions to foster investment and value chain partnerships between stakeholders, including between SWS industries and smallholders.

Policy challenges are integrating policies for environmental services markets (for example for biodiversity, carbon, and water) with those for wood production (Baral, Larsen and Archer, 2019); and certifying small-scale value chain actors as legal and sustainable (Arnold *et al.*, 2022). (See Box 1).

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Box 1. Regional examples of enabling policies

- Australia's "regional forestry hubs". These are supported by government and industry to facilitate stakeholders working together to expand plantation resources (Australian Government, 2023).
- China's National Forest Reserve Program. This aims to restore forest resources and landscapes, strengthen sustainable wood supply, and improve livelihoods (Chen, 2023).
- Viet Nam's reforestation policy programmes since the 1990s (Crowther *et al.*, 2020). These have catalyzed a national forest transition and a smallholder plantation estate that has established Viet Nam as the world's largest exporter of hardwood woodchips and fourth largest furniture exporter.

Sources

Australian Government. 2023. *Regional Forestry Hubs. Department of Agriculture, Fisheries and Forestry.* [online]. [Cited 20 December 2023]. https://www.agriculture.gov.au/agriculture-land/forestry/regional-forestry-hubs

Chen, J. 2023. *Entry points for strategic investments in scaling up sustainable wood supply from FLR: experience from China*. Chinese Academy of Forestry. Beijing.

Crowther, J., Zimmer, H., Thi, H.L., Quang, T.L. & Nichols, J.D., 2020. *Forestry in Vietnam-The potential role for native timber species*. Forest Policy and Economics 116: 102182.

3.4 Regional dialogue, learning, collaboration and action in support of SWS in the context of FLR

Participants in the Regional Dialogue identified a range of topics on which they would value further inter-country dialogue, learning, collaboration and action in support of SWS in the context of FLR. These topics included: strategies for empowering Indigenous Peoples' and communities' engagement and participation in SWS and FLR decision-making, implementation and benefit-sharing; joint learning opportunities for policymakers in relation to policy design to foster finance and markets for SWS and FLR investments and in relation to appropriate models of public-private partnerships; relevant research and technology development; development and promotion of common standards for investment in and implementing SWS and FLR; and promotion of public awareness and market demand for SWS.

These topics, and how they might be addressed, align well with those proposed by FAO and partners in the Regional Programmatic Framework for Forest and Landscape Restoration in Asia (the FAO RPF for FLR in Asia). They could be facilitated by intergovernmental organizations and platforms such as FAO, ASEAN, APEC or SPC; by international ENGOs and research centres; and through bilateral and multilateral partnerships supported by national and international development agencies. (See Box 2).

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Box 2. Examples of regional dialogue, learning, collaboration and action

- The Regional Dialogue on Integrating Sustainable Wood Supply and Forest and Landscape Restoration in Asia-Pacific, held in conjunction with the 30th Session of the Asia-Pacific Forestry Commission (APFC) in Sydney, Australia, 2 October 2023
- The FLR Asia Investment Forum, Bangkok, convened by FAO, UNEP and IUCN in Thailand, 15-16 November 2023

3.5 Technical packages and capacity development for SWS in the context of FLR

Technical packages and capacity development in policy and value chain actors are fundamental in fostering synergies between SWS and FLR (CPF, 2017 and FAO, SER, IUCN CEM, 2023). Technical packages include tested species and silviculture suited to local conditions and markets with sufficient seed and seedling supply and management guidelines based on local experience. For example, a recent review of successful smallholder wood value chains in the region identified the value of knowledge transfer to small scale actors, but found it was often inadequate (Carias *et al.*, 2022).

The UN Decade on Restoration Global Capacity Needs Assessment (2021) also identified capacity gaps across key FLR actor groups. Many presentations at the Regional Dialogue noted similar capacity development needs to support SWS and FLR objectives (ASEAN Centre for Biodiversity and Timor-Leste; Tonga UNFF/CPF).

The FAO Advisory Committee on Sustainable Forest-based Industries (ACSFI) Restoration Roundtable (FAO, 2022c) identified the potential for forest sector businesses to address capacity gaps. For example, larger forest sector businesses have substantial technical knowledge and capacities for SWS and, by working in partnerships, can transfer this knowledge to governments, SMEs and smallholders. (See Box 3).

Box 3. Regional examples of technical packages and capacity development

- The emphasis of technical packages varies with context. Examples include training in basic nursery techniques (Papua New Guinea), developing and providing advanced genetic material to smallholder growers (Viet Nam), and options to improve management of tree-based systems by individual farmers in Indonesia or communities in Nepal.
- In Gunungkidul, Indonesia, a suite of actors including local and national governments, NGOs and universities played key facilitating, technical and capacity development roles is promoting adoption of agroforestry systems for landscape restoration and sustainable wood supply (Nawir *et al.*, 2016).
- In Lao People's Democratic Republic, several companies developed and implemented innovative agroforestry systems to improve agricultural production and local livelihoods, restore degraded landscapes, and establish plantation wood resources (NGP, 2016). This approach has now been adopted more widely (Tan, 2023).

Sources

Nawir, AA, Gunarso, P, Santoso, H, Julmamsyah & Hakim, M.R. 2016. *Experiences, lessons and future directions for forest landscape restoration in Indonesia. In: FAO and RECOFTC.* 2016. Forest landscape restoration in Asia-Pacific forests. FAO and RECOFTC, Bangkok. 53–78. [online]. Bangkok. http://www.fao.org/3/a-i5412e.pdf

NGP (New Generation Plantations). 2016. *Integrating multiple land uses for improved livelihoods*. https:// newgenerationplantations.org/event/integrating-multiple-land-uses-for-improved-livelihoods/

Tan, J. 2023. *New Forests Southeast Asian Nature-based Solutions Strategy*. Presentation to FAO FLR Asia Investment Forum, Bangkok, 15-16 November.

3.6 Mobilizing finance and private sector participation and investment in SWS in the context of FLR

Financial returns from SWS provide a commercial incentive for private sector investment in FLR. Increasing demand for wood, together with reduced supply from natural forests, will continue to drive investment in planted forests for SWS (Brand, 2020). Investors are showing increasing interest in forest restoration to provide a mix of financial, social, and environmental outcomes, particularly to reduce greenhouse gas emissions and to demonstrate nature positive and socially beneficial outcomes.

Responsible investors are also seeking opportunities to invest in nature-based solutions to climate change and other environmental challenges and can provide funds for improving the condition of natural forests (Bull, Cesaero and Price, 2023). (See Box 4).

Investment options include blended finance models that integrate larger-scale finance from the public and private sectors with development finance for smallholder farmers to integrate trees in their farm production systems. Wood and non-wood products and services from these integrated wood supply models can support the development of local industries, providing employment opportunities and strengthening national and regional economies. In these cases, private capital seeking to fund FLR could also contribute to SWS, if appropriate SWS models are developed (Keenan *et al.*, 2023). Conversely, without such synergies, SWS and FLR will be competing for the same land areas and resources, with prospectively suboptimal outcomes for both.

3.7 Engaging and benefiting smallholders, micro-, small and medium enterprises and communities

Industry-smallholder partnerships are becoming increasingly important in providing wood supply in the Asia Pacific region (Arnold *et al.*, 2022 and Carias *et al.*, 2022). These partnerships are most successful and enduring where they provide equitable sharing of benefits and returns between partners, and in the context of supportive policy, institutional and market conditions (Shayamsundar *et al.*, 2022). Community forestry is well-established in many countries in the region, offering opportunities for partnerships between governments, businesses and communities to pursue SWS and FLR. These partnerships can deliver a range of benefits to communities and their partners, provided the mode of integration of SWS and FLR reflects local contexts and priorities. (See Box 5).

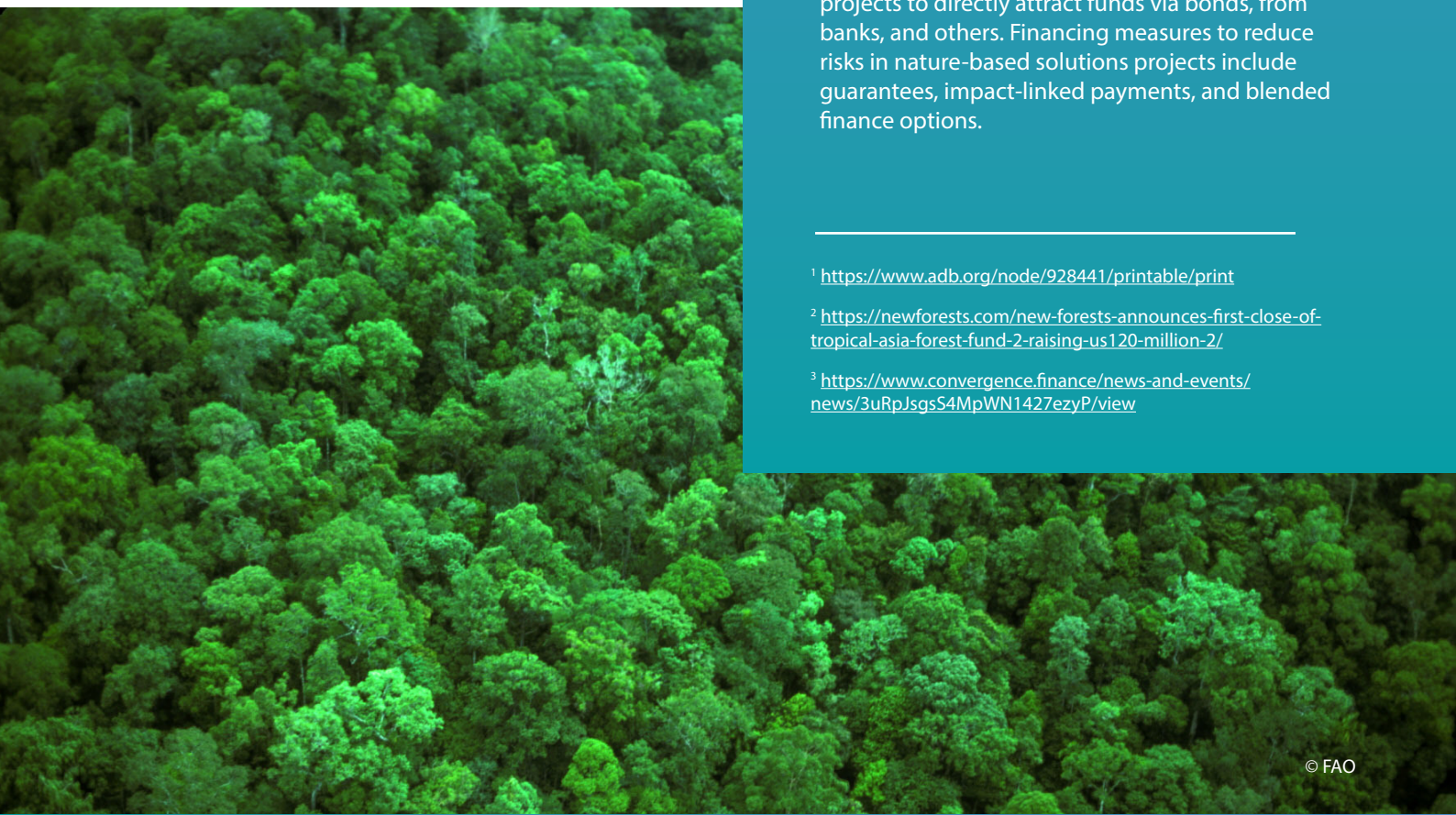
Box 4. Mobilizing finance and private sector participation and investment

- New Forests Tropical Asia Forest Fund 2 is developing a portfolio of sustainable forest plantation assets in Cambodia, Indonesia, Lao People's Democratic Republic Malaysia, Thailand and Viet Nam for end markets such as timber, rubber and carbon using a blended finance structure (including AUD 13 million from the Australian Government) to integrate climate action, community engagement and livelihoods, and biodiversity conservation with a plantation forestry portfolio.[1] This fund aims to demonstrate that integrating commercial forestry with ecosystem restoration, reforestation, and community forestry will lead to better returns, long-term sustainability and operational resilience. [2]
- NBSV Worldwide (a sister entity of Fairventures Social Forestry) was recently awarded a grant to design a dual blended finance structure to support 100 000 hectares of regenerative agroforestry projects in Indonesia. The projects will operate in close collaboration with local communities who will in turn benefit from the increase in employment and a stable income. [3]
- The Asian Development Bank (ADB) recently launched a Nature Solutions Finance Hub for Asia and the Pacific which aims to attract at least USD 2 billion into investment programmes that incorporate nature-based solutions, particularly focused on capital markets and other sources of private capital to support both upstream awareness, policy, and capacity building for nature-based solutions projects, and downstream innovative finance structuring in projects to directly attract funds via bonds, from banks, and others. Financing measures to reduce risks in nature-based solutions projects include guarantees, impact-linked payments, and blended finance options.

[1] https://www.adb.org/node/928441/printable/print

[2] https://newforests.com/new-forests-announces-first-close-of-tropical-asia-forest-fund-2-raising-us120-million-2/

[3] https://www.convergence.finance/news-and-events/news/3uRpJsgsS4MpWN1427ezyP/view



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Box 5. Engaging and benefiting smallholders, micro-, small and medium enterprises and communities

- Indonesia's Restorasi Ekosistem Riau initiative (RER, 2023) capitalizes on the resources of a major corporate business to implement ecosystem restoration in conjunction with sustainable wood production, and in partnership with conservation NGOs and local communities.
- In Lao People's Democratic Republic, a forestry plantation company has implemented an investment model that combines farmers' needs for food with the company's need for wood, through an integrated model where smallholders can grow food and trees and retain a high proportion of the total return from the agroforestry system (Phimmavong *et al.*, 2019). Such models can avoid potential conflicts over land allocation for plantations, build local engagement and support food security.
- Despite the success of Nepal's longstanding community forestry programme in FLR and community empowerment, the challenges of realizing SWS from community forests illustrate the need for appropriate policy and market settings to scale up SWS, and facilitate market linkages and investment in processing and relevant capacity development.
- Other examples presented at the Regional Dialogue included expanding agroforestry systems in India and Tonga, partnerships with communities in Bhutan and Papua New Guinea, and the expansion of smallholder plantations in Timor Leste.

Source
Phimmavong, S., Maraseni, T.N., Keenan, R.J. & Cockfield, G. 2019. Financial returns from collaborative investment models of Eucalyptus agroforestry plantations in Lao PDR. Land Use Policy 87: 104060.

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Conclusions and options for moving forward

SWS and FLR are important regional and national priorities in the Asia-Pacific region. Scaling up FLR to meet national commitments across the region is challenging, and responsible investment in SWS can help achieve FLR goals. Integrating SWS with FLR requires identifying the geographic locations where they intersect, empowering local communities and smallholders to benefit from SWS and FLR investments and partnerships, developing an enabling policy environment to facilitate responsible investment in SWS and sustainable forest management and value chains, and supporting implementation through capacity building, knowledge exchange, and appropriate technical packages. International organizations, national governments, private investors and forestry businesses, and environmental and community-based organizations, all have roles to play in partnership with Indigenous Peoples, local communities, smallholders and micro-, small and medium enterprises.

Policymakers can enable the integration of SWS and FLR by:

- reviewing policies to identify and address constraints to integrating SWS and FLR;
- using spatial planning processes and tools to identify locations where SWS best contributes to FLR, consistent with land use allocations, and focusing support for SWS development on these locations;
- granting greater control and responsibility for forest management to Indigenous People and local communities and supporting them to pursue SWS and FLR objectives in that context;
- increasing the involvement of smallholder farmers and local communities in establishing trees for SWS by providing secure land and tree tenure, improving infrastructure and access to finance and markets, developing suitable technical packages, and building their capacity;

- facilitating investment in sustainably managed natural forests, through mechanisms such as restoration concessions;
- promoting responsible investment in larger-scale plantations, by granting appropriate forms of long-term rights to grow timber plantations on degraded land to companies which develop smallholder, community and SME partnerships, invest in local processing facilities, and employ local people;
- implementing and enabling legal timber production and forest certification programmes in support of SWS;
- fostering partnerships along wood product value chains to ensure that all involved in SWS benefit from their participation within a framework of delivering broader FLR objectives;
- monitoring progress towards SWS and FLR goals and adapting policies and programmes as necessary; and
- working with international organizations, and community and private sector actors, in capacity building, knowledge exchange, resource mobilization and other activities.

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Bibliography

Arnold, R., Midgley, S., Stevens, P., Phimmavong, O., Kien N.D. & Chen, S. 2022. Profitable partnerships: smallholders, industry, eucalypts and acacias in Asia. *Australian Forestry* 85: 38–53.

Baral, P., Larsen, M. & Archer, M. 2019. *Does Money Grow on Trees? Restoration Financing in Southeast Asia.* Atlantic Council. [online]. [Cited 20 November 2023]. https://research.cbs.dk/en/publications/does-money-grow-on-trees-restoration-financing-in-southeast-asia

Brand, D. 2020. *Transforming the forestry asset class.* New Forests, Sydney. [online]. https://caia.org/sites/default/files/forestry.pdf

Bull, L., Cesaero, K. & Price, S. 2023. *Co-Chairs' Summary: Scoping Dialogue on Ecosystem Restoration*, 31 January & 1 February 2023. The Forests Dialogue, Yale. [online]. https://theforestsdialogue.org/sites/default/files/tplscoping_dialogue_cochairsummaryfinal.pdf

Caradine, R., Ezekiel, M., Piacsek, G. & Wang, M. 2023. *Linking forest restoration to sustainable value chains with se.plan*. Nicholas School of the Environment, Duke University.

Carias, D., Page, T., Smith, H., Race, D., Keenan, R.J., Palmer, G. & Baynes, J. 2022. *Beyond the 'Field of Dreams' model in smallholder forestry: Building viable timber value chains for smallholder tree growers in developing countries.* Land Use Policy 120: 106227

CPF (Collaborative Partnership on Forests). 2017. Concept note for SW4SW. [online]. [Cited 20 November 2023]. https://www.fao.org/collaborative-partnership-on-forests/initiatives/sustainable-wood-for-a-sustainable-world/en

Elias, M., Kandel, M., Mansourian, S., Meinzen-Dick, R., Crossland, M., Joshi, D., Kariuki, J., Lee, L.C., McElwee, P., Sen, A. & Sigman, E. 2021. *Ten people-centered rules for socially sustainable ecosystem restoration.* Restoration Ecology 30: e13574.

FAO. 2019. *Forest futures – Sustainable pathways for forests, landscapes and people in the Asia-Pacific region.* Asia-Pacific Forest Sector Outlook Study III. [online]. Bangkok. https://www.fao.org/3/ca4627en/ca4627en.pdf

FAO. 2022a. *Report – Thirty-sixth Session of the FAO Regional Conference for Asia and the Pacific.* Dhaka, Bangladesh, 8-11 March 2022. [online] Bangkok. https://www.fao.org/3/ni607en/ni607en.pdf

FAO. 2022b. *Ministerial call on sustainable wood*, 3 May 2022. [online]. Rome. [online]. Rome. https://www.fao.org/3/cc0247en/cc0247en.pdf

FAO. 2022c. *Restoration roundtable of the forest-based industry. Enhancing the forest sector's engagement in ecosystem restoration.* [online]. Rome. https://www.fao.org/forestry/51124-03da5c43a3aaff300d6c056f12da23ee2.pdf

FAO. 2023. Report of the Thirtieth Session of the Asia-Pacific Forestry Commission – Sydney, Australia 3–6 October 2023, pp. 30. [online]. Bangkok. https://www.fao.org/3/cc8556en/cc8556en.pdf

FAO. 2023. *Sustainable forests for a sustainable future.* Paper for Thirtieth Asia Pacific Forestry Commission Meeting, Sydney, 1-6 October 2023. [online]. https://www.fao.org/3/cc7053en/cc7053en.pdf

FAO. forthcoming. *Regional Programmatic Framework for FLR to advance the UN Decade on Ecosystem Restoration in Asia.* FAO, Bangkok.

FAO, SER and IUCN CEM. 2023. *Standards of practice to guide ecosystem restoration. A contribution to the United Nations Decade on Ecosystem Restoration.* Summary report. [online]. Rome. https://www.fao.org/3/cc5223en/cc5223en.pdf

FAO and APFNET. 2018. *Forest landscape restoration in Asia-Pacific forests.* {online]. Bangkok. http://www.fao.org/3/a-i5412e.pdf

FAO and WRI. 2022. *Aurora: Assessment, Understanding and Reporting of Restoration Actions.* https://auroramonitoring.org

Keenan, R., Louman, B., Brand,. D, Ojha, H. & Xi, L. 2023. Financial, ecological, political and social feasibility of forest restoration. Chapter 11 in Katila, P. *et al.*, (eds). *Restoring forests for sustainable development - policies, practices and impacts.* IUFRO.

Minnemeyer, S., Laestadius, L., Sizer, N., Saint-Laurent, C. & Potapov, P. 2011. *A world of opportunity*. Washington, D.C., World Resources Institute.

RER (Restorasi Ekosistem Riau). 2023. About Restorasi Ekosistem Riau (RER). [online]. [Cited 12 August 2023]. https://www.rekoforest.org/

SEPAL. 2023. se.plan. [online]. [Cited 23 August 2023]. https://docs.sepal.io/en/latest/modules/dwn/seplan.html

Shyamsundar, P., Cohen, F., Boucher, T.M., Kroeger, T., Erbaugh, J.T., Waterfield, G., Clarke, C., Cook-Patton, S.C. *et al.* 2022. Scaling smallholder tree cover restoration across the tropics. *Global Environmental Change* 76: 102591.

UNDER. 2021. *Global Capacity Needs Assessment.* [online]. https://www.fao.org/3/cb8019en/cb8019en.pdf

UNDER. 2023. *UN Decade on Ecosystem Restoration*. [online]. [Cited 22 October 2023]. https://www.decadeonrestoration.org

Presentations to FAO Regional Dialogue on Integrating SWS with FLR, Sydney, 2 October 2023
(available at https://drive.google.com/drive/folders/1iOl1jAHPXQtx4Z9yt0kc2oQJ9eeua6B2

Bakat, D. 2023. *Integrating sustainable wood supply with forest and landscape restoration in PNG: opportunities, constraints, and ways forward.* Papua New Guinea Forest Authority.

Chen, J. 2023. *Entry points for strategic investments in scaling up sustainable wood supply from FLR: experience from China*. Chinese Academy of Forestry.

Dhendup, P. 2023. *Key challenges and opportunities for integrating sustainable wood supply with FLR in Bhutan.* Department of Forest and Park Services, Bhutan.

Lim, M. S. 2023. *Integrating sustainable wood supply with forest and landscape restoration: opportunities, constraints, and ways forward.* ASEAN Centre for Biodiversity.

Mau, R. 2023. *Forest landscape restoration and sustainable wood supply case of Timor-Leste.* Ministry of Agriculture, Livestock, Fisheries and Forestry, Timor Leste.

Likiafu, H. 2023. *Integrating sustainable wood supply with forest and landscape restoration in Tonga: opportunities, constraints and ways forward.* Ministry of Agriculture, Food and Forestry, Tonga.

Park, E. 2023. *Korea's strategies for upscaling SWS for FLR.* Korea Forest Service.

Prasad, R. R. 2023. *Integrating sustainable wood supply with forest and landscape restoration in India: Opportunities, constraints, and ways forward.* Ministry of Environment, Forest and Climate Change, India.

Sayakoummane, S. 2023. *Integrating sustainable wood supply with forest and landscape restoration in Lao PDR: Opportunities, constraints, and ways forward.* Ministry of Agriculture and Forestry, Lao People's Democratic Republic.

Background Paper for FAO Regional Dialogue on Integrating SWS with FLR, Sydney, 2 October 2023.
(Available at https://drive.google.com/file/d/1XTtwSkzmpbpkJ2kDW3ZRNcKajTE9UbRj/view)

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